


REMARKS

Claims 1-20 are pending in the application. Claims 19 and 20 are newly added. Reconsideration of this application is respectfully requested.

The Office Action rejects claims 1-18 under 35 U.S.C 103(a) as unpatentable over U.S. Patent No. 6,361,138 to Seino et al., hereafter Seino, in view of U.S Patent No. 5,459,496 to Hanabusa et al., hereafter Hanabusa.

Independent claims 1 and 10 are directed to a method and a processor for determining service criteria of a printhead in a printer. The inventors have recognized that based on various criteria (that are discussed at pages 13-15 of the specification), an age of the printhead can be determined and a service procedure that is based on the calculated age is selected so as to have a prolonging impact on the lifetime of the printhead.

In contrast, Seino discloses a method and apparatus for collecting and storing the use history of a replaceable ink cartridge that supplies ink to a separate printhead. That is, Seino's procedures deal with replaceable ink cartridges that have a short lifetime compared to the lifetime of the printhead.

not claimed  The use history is stored in a memory built into the replaceable ink cartirdge, which upon removal can be returned to the manufacturer for analysis.

Seino teaches a procedure in Fig. 6 for filling the printhead with ink from a newly installed ink cartridge and a procedure in Fig. 7 that is performed after the printhead is filled with ink. These procedures have nothing to do with selecting an appropriate service procedure for the printhead itself based on a calculated age of the printhead as recited in claims 1 and 10.

The Office Action's reading of the claimed printhead service procedure and processor on the replaceable ink cartridge procedures of Seino is a gross misinterpretation of the plain language of independent claims 1 and 10. With respect to claim 1, Seino lacks the steps of determining and selecting. With respect to claim 10, Seino lacks a processor that performs the steps of determining and selecting.

The Office Action reads the step of determining a calculated age of the printhead on element C of Seino's flowchart of Fig. 6. Element C is described at column 4, lines 65-67, as determining whether or not a newly installed ink cartridge exceeds its expiration date. This step assures that the newly installed ink cartridge (and not the printhead) has not exceeded its useful life due to prior use (see discussion at column 7, lines 39-67) or to a long shelf life. In contrast, claim 1 recites: "determining a calculated age of the printhead". Thus, Seino lacks the determining step of claim 1 and of the processor of claim 10.

The Office Action reads the selecting step on element F of Seino's flowchart of Fig. 6. Element F is described at column 5, lines 7-18, as determining whether the ID data of the current ink cartridge and the ID data of the previous ink cartridge are identical. Based on the identity determination of step F and a user designation of a refill product at step H, ink is taken in a normal, middle or large amount (steps G, I and J) to fill the printhead for ensuing print operations at step K of Fig. 7. Taking ink from an ink cartridge to fill the printhead based on an identity determination is not selecting a service procedure based on a determined calculated age of the printhead as recited in claims 1 and 10. It is noted that the permissible life test of step C is a pre-condition to step F, but is not the basis upon which step F makes a selection decision. Thus, Seino lacks the selecting step of claim 1 and of the processor of claim 10.

The Office Action concedes that Seino does not determine a calculated age of the printhead as claimed, but that Seino does determine a calculated age

of the ink cartridge. The Office Action contends that it is well known in the art that the ink cartridge is an integral part of the printhead, citing Hanabusa as evidence thereof. The Office Action concludes that it would have been obvious to one of ordinary skill in the art to calculate the age of the printhead by calculating the age of the ink cartridge as taught by Seino, since it was well known in the art that the ink cartridge is an integral part of the printhead as taught by Hanabusa.

The conclusion of obviousness is erroneous. Since Seino's step F selects a service procedure based on cartridge identity and not on a calculated age, the alleged obviousness combination (Hanabusa's integral printhead and ink cartridge with Seino's procedures) would completely lack the step of selecting a service procedure based on the determined calculated age that is recited in claims 1 and 10.

Moreover, the alleged obviousness combination is improperly based on the hindsight of Applicants' disclosure. Such hindsight reconstruction of the art cannot be the basis of a rejection under 35 U.S.C. 103. The prior art itself must suggest that modification or provide the reason or motivation for making such modification. In re Laskowski, 871 F.2d 115, 117, 10 USPQ 2d 1397, 1398-1399 (CAFC, 1989). "The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made." Sensonic Inc. v. Aerosonic Corp. 38 USPQ 2d 1551, 1554 (CAFC, 1996), citing Interconnect Planning Corp. v. Feil, 774 F. 2d 1132, 1138, 227 USPQ 543, 547 (CAFC, 1985).

Seino determines an identity of a newly installed ink cartridge (a new cartridge or one that still has useful life) and selects a printhead filling procedure based on the identity determination. Hanabusa's integral printhead and ink cartridge has no need for such determination and selection since the printhead and ink cartridge are integral. That is, there is no need to make any

determination of ink cartridge compatibility with the printhead. Thus, there is no motivation for one skilled in the art to combine Seino and Hanabusa.

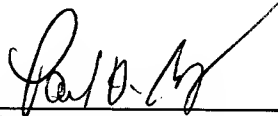
For the reasons set forth above, it is submitted that the rejection of claims 1-18 under 35 U.S.C. 103(a) is erroneous and should be withdrawn.

Newly presented claims 19 and 20 provide that the selected service procedure of claims 1 and 10 has a prolonging impact on the useful life of the printhead. Neither Seino nor Hanabusa teach selection of a service procedure that prolongs the useful life of the printhead. Accordingly, it is submitted that claims distinguish from the cited art and are, therefore, allowable.

It is respectfully requested for the reasons set forth above that the rejections under 35 U.S.C. 103(a) be withdrawn, that claims 1-20 be allowed and that this application be passed to issue.

Respectfully Submitted,

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